APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

ZUBINA, E.M.; SPIRIDONOVA, N.P.

Biological characteristics of popular medical means applied in White Russia in protozoic diseases. Zdrav.Belor. 5 no.8:53-57 Ag '59. (MIRA 12:10)

1. Iz kafedry obshchey biologii Vitebskogo meditsinskogo instituta (zaveduyushchaya kafedroy E.M.Zubina).
(WHITE RUSSIA--MEDICINE, POPULAR)

Zubina, E. N. Cand Biolog. Sci

Dissertation: "Studying the Biological Activity of Drugs by Their Action on Paramecium."

17 October 49

First Moscow Order of Lenin Medical Inst

SO Vecheryaya Moskva
Sum 71

KORZHUYEV, P.A.; AKATOVA, N.N.; ZUBINA, N.F.

Some morphological and physiological characteristics of amphibians in ontogenesis [with summary in English]. Zool. zhur. 38 no.4:579-588 Ap '59. (MIRA 12:5)

1.Institute of Animal Morphology, Academy of Sciences of the U.S.S.R., Moscow.
(Amphibia)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

[illegible], [illegible], kand. [illegible] nauk; [illegible], V. [illegible], [illegible]

Effect of the [illegible] of air purification on the [illegible] of parts of the [illegible] engines. [illegible]
[illegible] D [illegible] ([illegible])

1. [illegible]
[illegible]

USSR/Geophysics - Erosion Apr 53

ZUBIYEMYAN, P.A.

"Control of Soil Erosion in the Armenian SSR," Cand of Agr Sci, P. A. Zubiyemyan, Inst of Viniculture and Viticulture, Armenian SSR

"Priroda", No 4, pp 107-108

Proposes use of Mergin system in laying foundations of terraces in Armenian SSR, which system is especially designed for (torrents) bare slopes.

261792

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

ZUBITSKII, P.

Prochnye svarnye mosty - zheleznym dorogam. [Solid, welded bridges for railroads].
(Zhel-dor. transport, 1948, no. 10, pp. 73-81, diagrs.)
DLC: HE7.A5

SO: SOVIET TRANSPORTATION AND COMMUNICATIONS, A BIBLIOGRAPHY, Library of Congress Reference Department, Washington, 1952, Unclassified.

ZUBIYETOV, I.P., inzh.; AKOPYAN, S.I., kand. tekhn. nauk, otv. red.; GOSTEV, [redacted], zam. otv. red.; VASIL'YEV, A.V., kand. tekhn. nauk, red.; KRISTI, M.K., prof. red.; L'VOV, Ye.D., prof., red.; MALASHKIN, B.M., kand. tekhn. nauk, red.; YUDUSHKIN, N.G., inzh., red.; UVAROVA, A.F., tekhn. red.

[Standardizing fuel pump plungers used in the D-35 and D-54 tractor diesel engines] Unifikatsiia plunzherov toplivnykh nasosov dlia traktornykh dizelei D-35 i D-54. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroitel'noi lit-ry 1956. 14 p. (Moscow. Gosudarstvennyi soiuznyi nauchno-issledovatel'skii traktornyi institut. [Trudy] no.15). (MLRA 10:9)

1. Direktor nauchno-issledovatel'skogo avtotraktornogo instituta (for Akopyan). 2. Zamestitel' direktora po nauchnoy rabote nauchno-issledovatel'skogo avtotraktornogo instituta (for Gostev).
(Tractors—Engines)

AUTHOR: Zubiyetov, I.P. 113-58-7-3/25

TITLE: The Characteristics of the Fuel Supply by Pumps with a Distributor (Osobennosti podachi topliva nasosami s raspredelitelem)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 7, pp 6-8 (USSR)

ABSTRACT: In its development of the ON-2 fuel feed pump with a distributor, NATI has changed the scheme of the high pressure line by changing over the delivery valve from the cavity above the plunger pair to the distributor (Fig. 2b). The amount of fuel over the valve in the distributor has been reduced to a minimum. Further design changes of the ONM pump devised by NATI-NZTA (Fig. 5) (as compared with the single-plunger BKB fuel pump designed by the Kotlyarenko brothers and G.B. Bartulli (Fig. 4)) provide a complete removal of the remaining pressure of both line sectors of high pressure. This was found to be the most effective arrangement. There are 2 graphs, 4 diagrams, 1 oscillogram and 1 Soviet reference.

ASSOCIATION: NATI (NATI)

1. Fuel pumps--Design 2. Fuel pumps--Performance

Card 1/1

ZUBIYETOV, I.P.

AUTHOR: Zubiyetov, I.P. 113-58-3-14/16

TITLE: Regulator of the Fuel Pump American Bosch (Regulyator toplivnogo nasosa Ameriken Bosh)

PERIODICAL: Avtomobil'naya Promyshlennost', 1958, Nr 3, pp 43-44 (USSR)

ABSTRACT: The mechanical fuel pumps for diesel engines have the following drawbacks: the great stress on the foot lever causes driver fatigue; during work at high speed ranges, the degree of irregularity is increased sharply. Measures were tried to avoid these drawbacks. The stress on the foot lever is reduced by indirect action on the spring of the regulator. The irregularity in the work at high speeds, is reduced by a combination of springs. In Soviet engine manufacturing, such a system is used in the fuel pump of the engine 4Ch $\frac{8.5}{11}$ and the same device is used in the fuel pumps of "American Bosch". Figure 2 shows the position of the spring in correspondence to the regulator lever. The tests of the fuel pump of the American Bosch show that irregularity, even at a considerable change of speed is slight. According to the author, the pump has the drawback that the elements of regulation and the spring may be damaged during operation.

AVAILABLE: Library of Congress

Card 1/1 1. Fuel pumps-Design 2. Diesel engines-Equipment

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

ZUBIYETOV, I.P.

Characteristics of fuel feed by pumps having diaphragms. Avt. prom. no. 7:8-9 Jl '58. (MIRA 11:8)

1. Nauchno-issledovatel'skiy avtotraktornyy institut.
(Automobiles--Fuel systems)

Zubiyetov, I.P.

AUTHOR: Zubiyetov, I.P. and Andreyeva, Ye.N. 113-58-6-9/16

TITLE: Research on Distribution Type Fuel Pumps (Issledovaniye toplivnykh nasosov raspredelitel'nogo tipa)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 6, pp 26-29 (USSR)

ABSTRACT: The authors describe in detail the distribution type PSA and PSB fuel pumps, constructed by the US firm of American Bosch. The NATI laboratory made an extensive research on two of such pumps; PSB-4A for 4 cylinders and PSB-6A for six cylinders engines. Conclusions made in regard to their dimensions and weight show that these pumps are not as good as other known foreign distribution type pumps.
There are 7 graphs, 3 diagrams, 1 table and 4 non-Soviet references.

ASSOCIATION: (NATI)

Card 1/1 1. Fuel pumps--Research and Development

ZUBIYETOV, I. P.; ANDREYEVA, Ye. N.

Investigating fuel distribution pumps. Avt. prom. no. 6:26-29 Je '58. (MIRA 11:7)

1. Nauchno-issledovatel'skiy avtotraktornyy institut.
(Fuel pumps)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

ZUBIYETOV, I. [redacted]

Evaluating the functions of fuel feed control. Avt.i trakt.prom. no.6:21-22 Je '57. (MLRA 10:8)

1.Nauchno-issledovatel'skiy avtotraktornyy institut.
(Tractors--Fuel systems)

ZUBIYETOV, P.I., promyshlenno-sanitarnyy vrach (st. Melitopol', Stalinskaya doroga).

Changing the exhaust system of gasoline-powered rail cars. Elek. i tepl. tiaga no.2:35 F '57. (MLRA 10:5)
(Railroad motorcars)

ZUBIYETOV, P.P., prepodavatel'

[Radio receivers; assignments for written examinations for students of radio engineering departments] Radiopriemnye ustroistva; zadaniia na kontrol'nye raboty dlia uchashchikhsia radiootdeleniia. Spetsial'nost' "Radioveshchenie." Moskva, 1958. 10 p. (MIRA 12:3)

1. Moscow. Vsesoyuznyy zaochnyy tekhnikum svyazi. 2. Vsesoyuznyy zaochnyy tekhnikum svyazi (for Zubiyetov).
(Radio--Receivers and reception)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

ZUBIYETOV, P.P., prepodavatel'

[Radio receivers and stations; assignments for written examinations and course projects for students of radio engineering departments] Radiopriemnye ustroistva i stantsii; zadaniia na kontrol'nye raboty i kursovoi proekt dlia uchashchikhsia radiootdeleniia. Spetsial'nost' - "Radiosviaz'." Moskva, 1958. 25 p. (MIRA 12:3)

1. Moscow. Vsesoyuznyy zaochnyy tekhnikum svyazi. 2. Vsesoyuznyy zaochnyy tekhnikum svyazi (for Zubiyetov).
(Radio--Receivers and reception)

VELICHKIN, I.I., kand. tekhn. nauk; NISNEVICH, A.I., kand. tekhn. nauk; ZUBIYETOVA, M.P., kand. tekhn. nauk; ZHDANOVSKIY, N.S., doktor tekhn. nauk, retsenzent; SAVKIN, I.F., inzh. red.

[Rapid wear tests of diesel engines] Uskorennye ispytaniia dizel'nykh dvigatelei na iznosostoikost'. Moskva, Izd-vo "Mashinostroenie," 1964. 182 p. (MIRA 17:7)

ZUBLYETYAN, P.A., kandidat sel'skokhozyaystvennykh nauk.

"Soils of the Azerbaijan S.S.R." Reviewed by P.A. Zubletian. Izv. AN Arm.SSR.Biol.i sel'khoz.nauki 7 no.2:109-112 '54. (MLRA 9:8)
(Azerbaijan--Soils)

ZULIYEVIAN, P. A.

Soils - Soviet Armenia

Soils of Armenia. Nauka i zhizn' 19, No. 4, 1952.

Monthly List of Russian Accessions, Library of Congress
July 1952. UNCLASSIFIED.

Soils--Armenia

Using gravelly cemented soils for vineyards in Armenia. Vin. SSSR 12, No. 8, 1952

Monthly List of Russian Accessions, Library of Congress, December, 1952 Unclassified

1. [redacted], P. A.

2. USSR (600)

4. Armenia - Erosion

7. Fight against soil erosion in the hills of Armenia. Priroda 42, No. 4, 1953.

9. **Monthly List of Russian Accessions**, Library of Congress, April 1953. Unclassified.

ZUBIYETYAN, V.G.

Determining the economic effectiveness of mineral fertilizers given to wheat on the Nata Nanra Collective Farm in Dzaragyukhsk District. Izv. AN Arm.SSR. Biol.i sel'khoz.nauki 9 no.6:91-99 Je '56. (MLRA 9:9)
(Armenia--Wheat) (Fertilizers and manures)

USSR/Cultivated Plants - Grains M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53543

Author : Zubiyetyan, V.G.

Inst : AS Armenian SSR

Title : An Experiment in the Determination of the Economic Effectiveness of Mineral Fertilizers Applied under Wheat in the Village of Mets Mazra of the Basargecharskiy Rayon (in the Form of a Discussion)

Orig Pub : Izv. AN ArmSSR, Biol. i s.-kh. n., 1956, 9, No 6, 91-99

Abstract : Experiments conducted in 1951-1953 established the economic effectiveness of the application of mineral fertilizers under winter and spring wheat after all preceding crops. Increase in the yield exceeds by 5-6 times the expense connected with fertilizing.

Card 1/1

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

ZUB

960. [illegible] 1946. [2], 200 [illegible] [1] [illegible]

[illegible] 1947, 25.4.

Зардаламидзе Григорий Иванович. Горная Тушетия. Эконом.-географическая характеристика. 1946. [2], 200 с., илл. [1] [illegible]

Защ. 1947, 25.4.

961. [illegible] 1950. 239 [illegible]

[illegible] 1950, 27.10.

Кахабадзе Владимир Спиридонович. Шидакартли. Экономико-географическая характеристика. 239 с., илл., 6 кар.

Защ. 1950, 27.10.

962. [illegible] 1954. 180 [illegible] 42 [illegible]

[illegible] 1955. 4.2.

Нацвлишвили Нодар Валерианович. г. Поти. (К эконом. географической характеристике). 1954. 180 с., 42 илл., кар. (Инст. геогр. АН Груз. ССР).

Защ. 1955. 4.2.

963. [illegible] 1943. 162 [illegible] 16 [illegible] 2 [illegible]

[illegible] 1944, 14.7.

Никурадзе Натан Несторович. Агрономическое хозяйство Аджарии. 1943. 162 с., 16 илл., 2 кар. (Батумский учит. инст.) (Опубл. отд. гл.)

Защ. 1944, 14.7.

964. [illegible] 1950. 285 [illegible]

[illegible] 1950, 30.6.

Угулава Сергей Павлович. Кутаисский район. К эконом. географической характеристике. 1950. 285 с., карт., [illegible] (Сухумский пед. инст.).

Защ. 1950, 30.6.

* * *

965. Алиев Зали Бейла Оглы. Азербайджан как овощная база. 108 с. с фотогр.

Защ. 1939, 17.6.

966. Зубиетян Вардитер Георгиевна. Даралагез (опыт экономико-географической характеристики). 1948. 173 [10] с., илл., 10 илл. л. (Ереванский гос. унив.).

Защ. 1948, 24.5.

967. Персадания Паруйр Парсаданович. К вопросу о перспективах экономического развития Котайкского района Армянской ССР (Экономгеогр. обзор). Ереван. 1944. 86 с., илл.

Защ. 1945, 30.3.

968. Порфирьев Андрей Иванович. Субтропическое хозяйство Краснодарского края. Краснодар. 1953. 209 с., 2 л., 34 фотограф. (Краснодарский пед. институт им. 15 летия ВЛКСМ).

Защ. 1953, 19.6.

Dissertation for degree of

Candidate Geographical Sciences

Def. at
Tbilisi State U.

ZUBKEVICH, G.I.

Effect of aqueous extracts from weed seeds on the growth of rape seedlings. Bot.; Issl.Bol.otd.VBO no.7:47-52 '65.
(MIRA 18:12)

ZUBKIN, A.

How to conduct courses on the study of toxic chemical agents.
Voen.znan. 32 no.2:26 F '56. (MLRA 9:5)
(Chemical warfare)

MAL'SHINSKIY, Arkadiy Arkad'yevich; ZUBKIN, A.A., redaktor; KANEVSKAYA, M.D., redaktor; BLAZHENKOVA, G.I., tekhnicheskiy redaktor

[Chemical weapons of foreign armies and defense against chemical warfare] Khimicheskoe oruzhie inostrannykh armii i protivokhimicheskaia zashchita. Moskva, Izd-vo DOSAAF, 1957. 93 p. (MLRA 10:8)
(Chemical warfare)

LEBEDEVA, Yulia Aleksandrovna; ZUBKIN, Aleksandr Stepanovich; KANEVSKAYA, M.D., redaktor; KARYAKINA, M.S., tekhnicheskiy redaktor.

[What one should know about poisonous and radioactive substances] Shto nado znat' ob otravliaiushchikh i radioaktivnykh veshchestvakh. Moskva, Izd-vo DOSAAF, 1956. 62 p. (MLRA 9:6)
(Chemical warfare) (Radioactivity)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

ZUBKOV, A.I., inzh.-kapitan 2 ranga

Means and methods of decontamination. Voen.znan. 31 no.8:24 Ag '56. (MLRA 9:11)

(Decontamination (from gases, chemicals, etc.))

MEDVEDEV, Valentin Alekseyevich; YEFREMOVA, Ye.V., red.; ZUBKIN, A.S., red.; BLAZHENKOVA, G.I., tekhn. red.

[Rules of conduct in contaminated areas] Pravila povedeniia v zarazhennom raione. Moskva, Izd-vo DOSAAF, 1958. 47 p. (MIRA 11:7)
(Air defenses)

PHASE I BOOK EXPLOITATION 714

Zubkin, Aleksandr Stepanovich

Individual'nyye sredstva protivokhimicheskoy zashchity (Chemical Defense for Individuals) Moscow, Izd-vo DOSAAF, 1958. 63 p. 130,000 copies printed.

Ed.: Filimonov, I.M.; Tech. Ed.: Tsigel'man, L.T.

PURPOSE: The book is intended for the general public and as a textbook for studies in DOSAAF circles on problems of defense against modern chemical and bacteriological warfare (including radioactive fallout).

COVERAGE: The book deals with purpose, design, and operation of devices for protecting individuals against injury in chemical warfare. No personalities are mentioned. No references are given.

TABLE OF CONTENTS:

Card 1/3

Chemical Defense for Individuals 714

Card 2/3

Chemical Defense for Individuals 714

AVAILABLE: Library of Congress

SGM/ksv
11-18-58

Card 3/3

ZUBKIN, A.

Chemical weapons. Voen. znan. 35 no.2:28 F '59.
(MIRA 12:6)

(Chemical warfare)

ZUBKIN, Aleksandr Stepanovich; KANEVSKAYA, M.D., red.; MUKHINA, Ye.S., tekhn.red.

[What decontamination and degassing is] Chto takoe deaktivatsiia i degazatsiia. Moskva, Izd-vo DOSAAF, 1960. 55 p.
(Civilian defenses) (MIRA 13:7)

ZUBKIN, Aleksandr Stepanovich; MEDVEDEV, Valentin Alekseyevich; KANEVSKAIA, M.D., red.; KOKOLEV, A.V., tekhn. red.

[Radioactive cloud and protection against it] Radioaktivnoe oblako i zashchita ot nego. Moskva, Izd-vo DOSAAF, 1961. 65 p.
(MIRA 14:8)

(Radioactive fallout)

ZUBKIN, Aleksandr Stepanovich; MEDVEDEV, Valentin Alekseyevich; BURNAZYAN, A.I.; ALYAB'YEV, A.F., red.; VLASOVA, N.A., tekhn. red.

[What is radioactive contamination and ways to protect against it] Chto takoe radioaktivnoe zarazhenie i sposoby zashchity ot nego. Moskva, Gosatomizdat, 1963. 52 p. (MIRA 17:1)

Borodiev and Yu. A. Legostaev, Ed.; I. Ye. Lodder, Tech. Ed.; M. T.
Smirn-

PHASE I BOOK EXPLOITATION SOV/6426

Bogolyubskiy, G. N., I. I. Burlinov, L. V. Vinogradov, V. V. Voznesenskiy, V. S. Danilyuk, A. S. Zubkin, A. S. Il'yashev, M. D. Korablev, Yu. A. Lebedeva, Yu. K. Makarov, I. P. Miroshnikov, I. P. Novichenko, A. V. Popov, and V. A. Serebryakov

Zashchita naseleniya ot sovremennykh sredstv porazheniya; uchebnoye posobiye dlya organizatsii DOSAAF (Protection of the Population From Modern Means of Destruction; Handbook for DOSAAF Organizations) 2d ed., rev. and enl. Moscow, DOSAAF, 1963. 254 p. 450,000 copies printed.

Sponsoring Agency: Vsesoyuznoye ordena krasnogo znameni Dobrovol'noye obshchestvo sodeystviya armii, aviatsii i floty.

Eds. (Title page): I. S. Varennikov and L. V. Vinogradov; Compilers: M. D. Korablev and Yu. A. Lebedeva; Ed.: F. Ye. Godiner; Tech. Ed.: M. Z. Sorkin.

Card 1/3

BABKIN, I.A.; BOGOLYUBSKIY, G.N.; BURLINOV, I.I.; VOZNESHENSKIY, V.V.; DANILYUK, V.S.; ZAPOL'SKIY, G.N.; ZUBKIN, A.S.; IL'YASHEV, A.S.; KIPRIYAN, K.M.; KONDRAT'YEV, P.V.; KORABLEV, M.D.; LEBEDEVA, Yu.A.; MAKAROV, Yu.K.; MIROSHNIKOV, I.P.; NOVICHENKO, I.P.; POPOV, A.V.; SEREBRYAKOV, V.A.; KANEVSKAYA, M.D., red.; ANDRIANOV, B.I., tekhn.red.

[Protecting the public from present-day means of destruction; a textbook for organizations of the All-Union Voluntary Society for the Promotion of the Army, Aviation, and Navy] Zashchita naseleniia ot sovremennykh sredstv porazheniia; uchebnoe posobie dlia organizatsii Vsesoyuznogo dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu. Moskva, Izd-vo DOSAAF, 1958. 334 p. (MIRA 12:4)
(Civil defense)

ZUBKIN, A., inzh. podpolkovnik.

Locating the centers of contamination. Voen.znan. 34 no.4:34 Ap '58.
(Civilian defense) (MIRA 11:4)

ZUBKIN, A.

Radiation and chemical detection. Voen. znan. 37 no. 1:31-32 Ja '61. (MIRA 14:1)
(Radioactivity--Measurement) (Chemical warfare)

BOGOLYUBSKIY, G.N.; BURLINOV, I.I.; VINOGRADOV, L.V.; VOZNESENSKIY, V.V.; DANILYUK, V.S.; ZUBKIN, A.S.; IL'YASHEV, A.S.; KOMAREV, M.D.; LEBEDEVA, Yu.A.; MAKAROV, Yu.K.; MINOSHNIKOV, I.P.; NOVICHENKO, I.P.; POPOV, A.V.; SEREBRAKOV, V.A.; VARENNIKOV, I.S., red.; GODINER, F.Ye., red.; SORKIN, M.Z., tekhn. red.

[Protecting the population from present-day means of destruction] Zashchita naseleniia ot sovremennykh sredstv porazheniia; uchebnoe posobie dlia organizatsii DOSAAF. Pod obshchei red. I.S.Varennikova i L.V.Vinogradova. Izd.2., perer. i dop. Moskva, Izd-vo DOSAAF, 1962. 254 p. (MIRA 16:4)
(Civil defense)

ZUBKIN, A.Ya.

[Poultry house for 500 hens of lightweight breeds; clay-filled wattle walls. Plan no.0506-B] Ptichnik na 500 kur legkikh porod; steny glinopletnevye. Proekt no.0506-B. Moskva, 1955. 9 p., 4 plans. (MLRA 9:6)

1.Russia (1923- U.S.S.R.) Ministerstvo gorodskogo i sel'skogo stroitel'stva.
(Poultry houses and equipment)

ZUBKIN, A.Ya., arkhitektor; ZYKOV, A.M., redaktor

[Houses for fattening 150 swine; walls of logs] Svinarnik-otkormochnik na 150 golov; steny rublenye. Tipovoi proekt No.0231. Moskva, 1956. 16 p. 14 plans. (MLRA 9:12)

1. Russia (1923- U.S.S.R.) Ministerstvo gorodskogo i sel'skogo stroitel'stva.
(Swine houses and equipment)

ZUBKIN, A.Ya.

[Sheep house for 800 head; adobe walls. Plan no.0322] Ovcharnaia na 800 golov; steny samannye. Proekt no.0322. Moskva, 1955 10p. 7plans (MIRA 9:6)

1. Russia (1923- U.S.S.R.) Ministerstvo sovkhozov i sel'skogo stroitel'stva.

(Sheep houses and equipment)

ZUBKIN, A. IA.

Stables for horses Moskva, Gos. izd-vo selkhoz. lit-ry, 1951. 78 p.
(V pomoshch' sel'skomu stroteliu)

ZUBKIN, A.Ya., arkhitektor.

[Sheep house for 800 head; adobe walls with stone columns. Plan no.0321] Ovcharnia na 800 golov; steny samannye v kamennykh stolbakh. Proekt no.0321. Moskva, 1955. 9 p., 7 plans. (MLRA 9:6)

1.Russia (1923- U.S.S.R.) Ministerstvo gorodskogo i sel'skogo stroitel'stva.

(Sheep houses and equipment)

ZUBKIN, A.Ya., arkhitektor.

[Sheep house for 300 head for treeless southern and central districts; adobe walls. Plan no.0304] Ovcharnia na 300 ovets dlia iuzhnykh i tsentral'nykh bezlesnykh raionov; steny samannye. Proekt no.0304. Moskva, 1955. 16 p., 11 plans. (MIRA 9:6)

1.Russia (1923- U.S.S.R.) Ministerstvo gorodskogo i sel'skogo stroitel'stva.

(Sheep houses and equipment)

ASHERSON, M. (Fergana); ALEKSEYEVA, M.; ZAMKOVSKIY, V., liteyshchik; BYKOVA, V. (Kiyev); ZUBKO, A.; DUKHNEVICH, B. (Vil'nyus)

On good people. Sov. profsoiuzy 19 no.11:19 Je '63.

(MIRA 16:8)

1. Literaturnyy sotrudnik mnogotirazhnoy gazety fabriki "Skorokhod", Leningrad (for Alekseyeva). 2. Mekhanicheskiy zavod "Santekhprom", Simferopol' (for Zamkovskiy). 3. Nachal'nik otdeleniya Gosudarstvennoy avtomobil'noy inspektsii Sovetskogo ra[illegible], Kuybyshev (for Zubko).

(Trade unions—Officers)

ZUBKO, A., inzhener.

Installation of roller bearings in ZVN and ZVG roller mills. Muk.-elev. prom. 23 no.6:23-24 Je '57. (MLRA 10:9)

1. Mel'nitsa No.1 v Zhana-Semey.
(Grain-milling machinery) (Bearings (Machinery))

CA

7

Local spectral analysis in solving some metallographic problems. V. I. Danilov and A. M. Zubko. *Zavodskaya Lab.* 11, 672 Sept 1945. Methods for analysis of non-metallic inclusions in metals and of liquation nonuniformity of steel are discussed. Three references. W. R. H.

A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION

Local Spectral Analysis in Solving Some Metallographic Problems. V. I. Danilov and A. M. Zubko (*Zavod. Lab.*, 1945, 11, 672–680; *C. Abs.*, 1946, 40, 2755).—(In Russian). Methods for the analysis of non-metallic inclusions in metals and of liquation non-uniformity of steel are discussed.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

CA

2

Scattering of x-rays in an acetone-water solution. V. I. Danilov, [illegible] M. Zubko, and A. I. Danilova. *Zhur. Eksptl. Teoret. Fiz.* 19, 242-6(1949).—In pure H_2O at room temp., with Ag and Cu radiation, max. are found at $\sin\theta/\lambda$ = 0.10, 0.23, 0.35, and 0.50. The curve for pure Me_2CO has a peak at about 0.12; in the range 0.2–0.3, where the H_2O curve has its 2nd max., the Me_2CO curve shows a uniform decrease of intensity. The curve of a soln. Me_2CO:H_2O = 1:2.5 mol. shows the peak of Me_2CO at 0.12 and a hint of a max. between 0.2 and 0.3, i.e., in the region of the 2nd max. of H_2O, and 2 further max. in the ranges 0.3–0.4 and 0.5–0.6. Consequently, there is no simple additive superposition at small $\sin\theta/\lambda$ up to about 0.2, but above 0.2 there is additivity. This is consistent with the presence, in the soln., of small areas with a structure close to that of the pure components.

N. Thon

APPROVED FOR RELEASE: Thursday, September 26, 2002

537.531 535.42 : 532.7

5488. **Scattering of X-rays in an acetone-water solution.** DANILOV, V. I., ZUBKO, A. M. and DANILOVA, A. I. *J. Exp. Theor. Phys., USSR*, 19, 243–50 (*March*, 1949) *In Russian.*—There are considerable differences in the results of diffraction studies by various authors of this solution, as well as of comparable solutions (e.g. benzol-cyclohexane), and they mainly concern the question whether or not a superposition of the patterns due to the single components takes place. The fact that the first maxima of either component appeared separately led Ward (*Amer.* 1777 (1934)], and after him Mokhov (*Dnepropetrovsk Univ. Publ.* (1938)], to conclude that the superposition principle did not apply unrestrictedly. A later check on Ward's data by Eisenstein and Gingrich [*Amer.* 2155 (1942)] proved these to be incorrect, as the latter authors found superposition already for the first maximum. The paper gives a detailed report on a repetition of Mokhov's experiments in monochromatic radiation, in order to clarify the question whether an quantitative structural analysis of solutions is possible at all in spite of the well-known "washed-out" appearance of the diffraction pictures. The results are discussed, referring to work of many other authors on the subject, and to the individual diffraction curves of the components, and it is shown that the ratio $(a_1+a_2)/\lambda$ decides whether or not superposition takes place. Up to a value of 0·2 of the ratio, there is no superposition, whereas it always occurs above this value. The conclusion reached is that in solutions there are always small regions of a structure similar to the structure of the individual components. This is also supported by a comparison with Bernal and Fowler's hypothesis of the structure of water (*Amer.* 1951 (1933)], especially by the quadruple co-ordination of the molecules assumed by this theory. G. I. H.

A 38-11 A METALLURGICAL LITERATURE CLASSIFICATION

ZUBKO, A.M., kand.fiz.-mat.nauk.

X-ray investigation of certain binary liquid systems. Probl. metalloved.i fiz. met. no.[1]:106-112 '49. (MIRA 11:4)

1.Laboratoriya kristallizatsii TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii.
(Systems (Chemistry))
(X rays--Diffraction)

ZUBKO, A. M.

USSR/Physics
Solutions
X-Rays - Scattering

Mar 49

"X-Ray Scattering in a solution of Acetone and Water," V. I. Danilov, A. M. Zubko, A. I. Danilove, Inst of Metallophys, Cen Sci Res Inst of Ferrous Metals, 4½ pp

"Zhur Eksper i Teoret Fiz" Vol XIX, No 3

Presents results of X-ray investigation of acetone-water solution. Submitted 23 Sep 48.

pa 32/49T100

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

CA

Fine structure of active carbons. V. I. Danilov and A. M. Zubko. *Doklady Akad. Nauk S.S.S.R.* 82, 385–8 (1952).—The structures of a no. of carbons (activated, natural, or low-temp. cokes) were investigated by the method of integral analysis of x-ray intensity curves, yielding radial at. distribution functions which can be compared with various structure models. The results are plotted in the form of $4\pi R^2\rho(R)$, where ρ is the d. (in atoms/A.) at the distance R, as a function of R. For an active C heated 25 hrs. in vacuo at 1000°, maxima are found at R = 1.4, 2.55, 4.1, and 5 A.; the area under the 1st max. is about 3, under the 2nd about 7 units; there is a sharp rise of the curve after the 2nd max. For different carbons, the positions of the maxima lie at the same R; these coincide entirely with the atom concn. in graphite lattices. Different carbons show different degrees of order, always increasing with the temp. of heating, and manifesting itself in a decreasing width of the maxima on the distribution curve and an increasing area of the 1st and 2nd max. from the rest of the curve. Further conclusions are obtained by comparisons of the exptl. distillation curves with theoretical curves calcd. for definite models, specifically a lattice model with lattice dimensions of ~14 A. and blocks constituted on the av. by 2 parallel lattices, oriented at any angle relative to each other, in contrast to the disposition in graphite crystals. Such a model gives a distribution curve similar to the exptl. curve.

N. Thon

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

BTR

7737* The Fine Structure of Active Carbon. (In Russian.) V. I. Danilov and A. M. Zubko. *Doklady Akademii Nauk SSSR* new ser. v. 82, Jan. 21, 1952, p. 385-388

Data on the above are charted and discussed

DANILOV, V. I., [illegible]

Carbon, Activated

Fine structure of activated carbon Dokl. AN SSSR 82 No. 3, 1952

SO: Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

ZUBKO, A.M.; SPEKTOR, Ye.Z.

X-ray analysis of the structural modifications in coke varieties used in blast furnaces. Dokl. AN SSSR 99 no.2:251-254 N '54. (MLRA 8:2)

1. Institut metallovedeniya i fiziki metallov TsNIIChM. Predstavleno akademikom G.V.Kurdyumovym.

(Coke) (X rays--Industrial applications)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

ZUBKO, A.M., kand.fiz.-mat.nauk; SPEKTOR, Ye.Z.

X-ray investigation of cokes and coals; coke structure in the blast furnace. Probl. matalloved. i fiz. met. no.4:77-86 '55. (MIRA 11:4)
(Coke) (X rays--Industrial applications)

ZUBKO, A.M.

DANILOV, Vitaliy Ivanovich, professor, doktor fiziko-matematicheskikh nauk, laureat Stalinskoy premii; KURDYUMOV, G.V., akademik, redaktor; DANILOVA, A.I., redaktor; ZUBKO, A.M., redaktor; KAMENETSKAYA, D.S., redaktor; LASHKO, A.S., redaktor; OVSIYENKO, D.Ye., redaktor; SKRYSHEVSKIY, A.F., redaktor; SPEKTOR, Ye.Z., redaktor; KAZANTSEV, B.A., redaktor izdatel'stva; RAKHLINA, N.P., tekhnicheskiy redaktor

[Structure and crystallization of liquids; selected articles] Stroenie i kristallizatsiia zhidkosti; izbrannye stat'i. Pod red. G.V.Kurdiumova. Kiev, Izd-vo Akademii nauk UkSSR, 1956. 566 p. (MLRA 9:10)

1. Deystvitel'nyy chlen AN USSR (for Danilov)
(Liquids) (Crystallization)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

20-114-6-28/54

AUTHORS: Zubko, A. M. and Spektor, Ye. Z.

TITLE: Concerning the Problem of Graphitization of Carbonaceous Substances (K voprosu o grafitizatsii uglerodistykh veshchestv)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 114, Nr 6, pp. 1239-1241 (USSR)

ABSTRACT: In coke samples which were burned at 1700 - 1800°C narrow lines situated at angles of 22°35' (intensive), 33° (weak) and 41°45' (intensive) occur in radiograms. As is seen in table 1 and figure 1, the position of these lines neither agrees with the lines of the α-modification of graphite nor with those of β-graphite. The nearness of these lines to the position of the graphite-lines caused some research-men to consider them as belonging to a special graphite modification (references 1 - 5). Then the authors give additional data from own investigations of the graphitization of the substances mentioned in the title. It was interesting to determine the nature of the non-carbon-diffraction lines which become visible in coke after a temperature of 1700 - 1800°C. Pure cane carbon alone and with small additions of iron oxide and silic dioxide were burned. The results

Card 1/2

(figure 2) showed that the above-mentioned lines belong to a solid α-solution of Si in Fe. As the position of the diffraction lines of this solid solution is very close to that of graphite, they may become a source of error in conclusions on graphitization. There are 2 figures and 7 references, 4 of which are Slavic.

ASSOCIATION: Institute for Metallography and Metal Physics of the Central Scientific Research Institute of Ferrous Metallurgy (Institut metallovedeniya i fiziki metallov Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii)

PRESENTED: November 14, 1956, by G. V. Kurdyumov, Academician.

SUBMITTED: November 5, 1956

SOV/133-58-6-15/33

AUTHORS: Bokshitskiy, Ya.M., Yemyashev, A.V., Zubko, A.M. and Filippycheva, M.M.

TITLE: The Influence of Vacuum Melting on the Quality of Steel (Vliyaniye vakuumnoy vyplavki na kachestvo stali)

PERIODICAL: Stal', 1958, Nr 6, pp 520 - 525 (USSR).

ABSTRACT: An investigation of the influence of vacuum melting on the quality of Kh27 and 18KhNVA steels is described. Vacuum melting was carried out in a 12 kg furnace previously described (Ref 5). The conditions of melting and heating of liquid metal, teeming temperature and the time of retention in the final vacuo were the same for all melts. As a charge, mild steel ingots smelted in the usual manner in a 30-kg high-frequency furnace were used. The pressures used were: 1 mm and 1/10 of a metre, $5\text{-}8 \cdot 10^{-3}$ mm and $5 \cdot 10^{-5}$ mm. The results of chemical gas analysis and impact strength of steel Kh27 smelted under normal pressure and in vacuo - Table 1. The impact strength of forged and hardened-in-water from 900 °C metal from all heats was low. In order to find factors determining the impact strength of Kh27 steel, a series of vacuo heats using electrolytic materials were carried out. The results obtained showed that apparently the main element determining the impact strength is carbon. The influence of

Card1/4

The Influence of Vacuum Melting on the Quality of Steel

the depth of vacuo on the composition of metal, the gas content and the content of admixtures in steel is shown in Tables 2 and 3 and Figure 1, respectively. The influence of depth of vacuo on the mechanical properties of forged and thermally treated Kh27 steel - Table 4; the dependence of impact strength of the steel smelted in vacuo on the carbon content - Figure 2 and on the gas content - Figure 3. It is concluded that: 1) Valcuum melting of Kh27 steel is accompanied by some changes in its chemical composition due to the evaporation of such elements as manganese and silicon and due to reactions forming gaseous products; 2) The change in chemical composition depends on the depth of vacuo; 3) Valcuum melting gives the following effects: a) the reaction between oxygen and carbon is more efficient; the content of carbon decreases to thousandths of parts of 1%; the reaction of sulphur with oxygen is also more intensive; b) the content of gas in the deoxidised metal decreases by a factor of 3; c) it has no influence on the structure of the metal. 4) On valcuum melting of steel Kh27 with its subsequent heat treatment, its impact strength can be considerably increased (30-60 times); the highest effect on the impact strength has the content of carbon;

The Influence of **Vacuum Melting** on the Quality of Steel

when the latter is below 0.01%, the impact strength of steel reaches 15 - 18 kg/cm^2; 5) On **valcuum melting** from electrolytic materials, the technological properties of steel Kh27 depend on the content of carbon and silicon.
Steel 18KhNVA was made from a steel (C 0.19-0.20%) smelted from Sulinsk sponge iron. The experimental heats were carried out under normal pressure and a vacuo of 0.5 - 1 mm and 1.10^{-4} mm. The composition of steel %: C 0.14-0.21; Si 0.17-0.37; Mn 0.25-0.55; P, S $\leq$ 0.035; W 0.80-1.20; Cr 1.35-1.65; Ni 4.00-4.50%. The gas content of metal from experimental heats in cast (nominator) and forged (denominator) state - Table 5; the amount of non-metallic inclusions - Table 6; mean indices of mechanical properties of longitudinal specimens from the experimental heats - Table 7. It is concluded: 1) That **vacuum melting** of 18KhNVA steel decreases the content of nitrogen and oxygen in steel: a) heats made at a vacuo of 10^{-4} mm contained many times less nitrogen (0.0020 - 0.0050%) than heats made under normal pressure (0.0080 - 0.0109%); the influence of the depth of vacuo on nitrogen content was not detected; b) the content of oxygen in vacuo

The Influence of Vacuum Melting on the Quality of Steel

heats at a pressure of 10^{-2} mm was on average 5 times smaller (0.0010 - 0.0028%) than in metal from heats made under normal pressure (0.0051 - 0.0140%); further decrease of pressure to 10^{-3} - 10^{-4} mm lead to a further decrease in the oxygen content (up to 0.0003 - 0.0005%). 2) Metal from vacuo heats contained 5-10 times less of non-metallic inclusions (0.0012 - 0.0058%) than the usual heats from industrial arc furnaces (0.0168 - 0.0281%) and possessed higher values for relative elongation (approximately by 40%) and impact strength (by 7 kg/cm^2). There are 3 figures, 7 tables and 5 references, 3 of which are Soviet, 1 French and 1 English.

ASSOCIATION: TsNIIChM

1. Vacuum furnaces--Effectiveness 2. Steel--Production
3. Steel--Mechanical properties

18.5100

75963
SOV/133-59-10-24/39

AUTHORS: Gurevich, Ya. B., Zubko, A. M.

TITLE: Concerning the Coefficient of Friction and Specific Pressure in Hot-Rolling Under Vacuum

PERIODICAL: Stal', 1959, Nr 10, pp 929-931 (USSR)

ABSTRACT: Initial tests concerned the determination of the coefficient of friction and resistance to deformation in hot-rolling under vacuum. The experimental part of the work was carried out by Rudenko, V. A., and Shashkova, V. N. The coefficient of friction was analytically determined by the value of the forward slip which was, in turn, established by means of center punch indentations. Total pressure (P) was divided by the surface of the contact of the metal with roll (F) to obtain the resistance to deformation; i.e., specific pressure during rolling (p): p = P/F. Research conducted by radiographic method (Zemskiy, S. V., of Central Scientific Research Institute of Ferrous Metallurgy (TsNIIChM)) on carbon distribution in iron and nickel

Concerning the Coefficient of Friction and Specific Pressure in Hot-Rolling Under Vacuum

75963
SOV/133-59-10-24/39

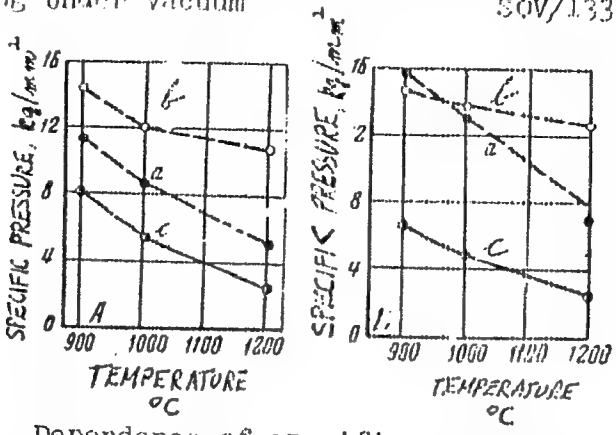


Fig. 3. Dependence of specific pressure in rolling under vacuum: (a) 10^{-2} mm Hg column and (b) 10^{-5} mm Hg column and in (c) regular rolling on temperatures: A, iron; B, nickel.

as well as sulfur in Kh27-type steel after 4-step heating at 1,150° C and regular rolling revealed an almost carbon-free surface of the nickel specimen.

Card 2/3

The carbon concentration gradually increased, reaching its initial value at 2 mm depth. After vacuum rolling the carbon content on the surface somewhat exceeded the initial content. Ostensibly, an increased concentration of carbon should reduce the coefficient of friction during rolling [Ref 3]. However, the absence of scale has a greater effect than the slight increase in the quantity of carbon which promotes resistance to deformation during rolling. Although results are only preliminary they show that hot-rolling under vacuum is accompanied by increased coefficient of friction and resistance to deformation. One of the causes is, evidently, the redistribution of some elements observed at high temperatures and during deformation under vacuum. There are 4 figures and 3 Soviet references.

ASSOCIATION: Central Scientific Research Institute of Ferrous Metallurgy (TsNIIChM)

ZUBKO, A.M., kand.fiz.mat.nauk; SPEKTOR, Ye.Z.

Method of quantitatively evaluating the graphitization of coke in blast furnaces. Probl.metalloved.i fiz.met. no.6:372-377 '59. (MIRA 12:8)

(Blast furnaces) (Coke)

YEMYASHEV, A.V.; ZUBKO, A.M., kand.fiz.mat.nauk; NEYMARK, V.Ye., kand. fiz.mat.nauk

Effect of vacuum smelting and pouring on properties of the metal and quality of the ingot. Probl.metalloved.i fiz.met. no.6:169-186 '59. (MIRA 12:8)
(Vacuum metallurgy) (Steel ingots--Testing)

Zub K o, A. M.

18(0) PHASE I BOOK EXPLOITATION SOV/2125

Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Institut Metallovedeniya i fiziki metallov

Problemy metallovedeniya i fiziki metallov (Problems in Physical Metallurgy and Metallophysics) Moscow, Metallurgizdat, 1959. 540 p. (Series: Its: Sbornik trudov, 6) Errata slip inserted. 3,600 copies printed.

Additional Sponsoring Agency: USSR. Gosudarstvennaya planova komissiya.

Ed. of Publishing House: Ye.M. Berlin; Tech. Ed.: P.G. Islent'yeva; Editorial Board: D.S. Kamenetskaya, B.Ya. Lyubov (Resp. Ed.), Ye.Z. Spektor, L.M. Utevskiy, L.A. Shvartsman, and V.I. Malkin.

PURPOSE: This book is intended for metallurgists, metallurgical engineers, and specialists in the physics of metals.

COVERAGE: The papers in this collection present the results of investigations conducted between 1954 and 1956. Subjects

Card 1/18

covered include crystallization of metals, physical methods of influencing the processes of crystallization, problems in the physical chemistry of metallurgical processes, development of new methods and equipment for investigating metals, and production control. References follow each article.

TABLE OF CONTENTS:

Card 2/18

18(0) PHASE I BOOK EXPLOITATION SOV/2125

Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.
Institut Metallovedeniya i fiziki metallov

Problemy metallovedeniya i fiziki metallov (Problems in Physical Metallurgy and Metallophysics) Moscow, Metallurgizdat, 1959. 540 p. (Series: Its: Sbornik trudov, 6) Errata slip inserted. 3,600 copies printed.

Additional Sponsoring Agency: USSR. Gosudarstvennaya planova komissiya.

Ed. of Publishing House: Ye.N. Berlin; Tech. Ed.: F.G. Islent'yeva; Editorial Board: D.S. Kamenetskaya, B.Ya. Lyubov (Resp. Ed.), Ye.Z. Spektor, L.M. Utevskiy, L.A. Shvartsman, and V.I. Malkin.

PURPOSE: This book is intended for metallurgists, metallurgical engineers, and specialists in the physics of metals.

COVERAGE: The papers in this collection present the results of investigations conducted between 1954 and 1956. Subjects

Card 1/18

covered include crystallization of metals, physical methods of influencing the processes of crystallization, problems in the physical chemistry of metallurgical processes, development of new methods and equipment for investigating metals, and production control. References follow each article.

TABLE OF CONTENTS:

Card 18/18

1.1300A

S/180/61/000/002/002/012
E073/E535

AUTHORS: Pavlov, I.M., Sigalov, Yu.M., Shelest, A.Ye., Zubko, A.M. and Gurevich, Ya.B. (Moscow)

TITLE: Investigation of the Process of Hot Rolling of Aluminium in Vacuum and in Air

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1961, No.2, pp.64-67

TEXT: The influence on the friction coefficient of scale or an oxide film layer on the surface of a metal being rolled has been the subject of numerous papers. However, no direct comparison was made of the ordinary process of rolling aluminium in air and in vacuum. Such a comparative study will permit direct elucidation of the influence of oxide films on the conditions of rolling. The authors investigated the power consumption, the speed and deformation conditions and the friction coefficient during hot rolling of aluminium in vacuum and in air. The rolling was on TsNIIChermet laboratory vacuum equipment permitting heating, rolling and cooling of 15 x 20 mm, 200 mm long specimens in a vacuum down to 10^{-5} mm Hg. From a forged and annealed blank 150 x 10 x 12 mm

specimens were cut. These were heated in a tubular electric furnace. The heating temperature was maintained within ±15°C. Rolling was at 400°C with reductions of 20 to 70% per pass. The diameter of the rolls was 85 mm, the rolling speed 6.5 m/min. The rolls were of steel ШХ-15 (ShKh-15) (hardness 55 R_c) and had a polished surface. The pressure was measured by wire strain gauges. Fig.1 shows a typical oscillogram in which 1 is the torque on the top spindle, 2 and 5 - pressure measured by the strain gauges, 3 - recorded roll speed, 4 - recorded strip speed, 6 - torque on the lower spindle, 7 - oscillation curve (500 c.p.s.). Fig.2 shows the dependence of the broadening $\psi = B_2/B_1$, % on the relative reduction $\Delta B/\Delta h$, where H, B_1 and L_1 are respectively the height, width and length of the specimens before rolling and h, B_2 and L_2 are respectively the height, width and length after rolling, $\Delta B = B_2 - B_1$ and $\Delta h = H - h$. (Here and in the following plots the dashed line curve refers to results obtained in vacuum and the continuous line curve refers to results obtained in air). Fig.3 shows the lead S_h as a function of the broadening,

whereby

$$S_h = \frac{L_{strip} - L_{roll}}{L_{roll}} \qquad (1)$$

where L_{strip} is the distance between the markings on the strip and L_{roll} is the distance between corresponding markings on the roll. Fig.4 shows the dependence of the specific pressure P, kg/mm^2 on the broadening ψ,%. Fig.5 shows the friction coefficient f' as a function of ψ,%. Fig.6 shows the torque M, kgm as a function of ψ,%. It was found that the friction coefficient and the required force, which depends directly on the friction coefficient, for vacuum hot rolling of titanium, grade BT-1 (VT-1), is considerably lower than for rolling in air, whilst for nickel and iron (C - 0.01%) it is higher in the same way as it is for Al. This again confirms the dependence of these quantities on the chemical composition of the rolled metal. The following conclusions are arrived at:

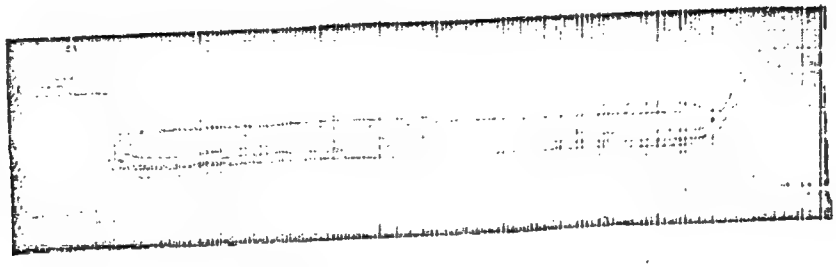
1. It was established that for Al the coefficient of friction

Investigation of the Process ...

during rolling in vacuum is higher than for rolling in air, whereby the greatest difference (by a factor of about 1.4) was observed for smaller reductions;
2. it was confirmed that the friction coefficient during rolling decreases with increasing specific pressure both in air and in vacuum. There are 6 figures and 7 references: all Soviet.

SUBMITTED: August 8, 1960

Fig.1



GUREVICH, Ya. B. (Moskva); ZUBKO, A.M. (Moskva); PAVLOV, I.M. (Moskva); (SIGALOV, Yu.M. (Moskva)

Effect of the state of specimen surfaces on the coefficient of friction and other parameters during the rollings of iron in vacuum. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.2:144-145 Mr-Ap '61. (MIRA 14:4)

(Rolling(Metalwork))
(Friction)

26582

S/148/61/000/006/006/013
E073/E535

1.1300 also 1496 1416 1413

AUTHORS: Pavlov, I.M., Sigalov, Yu. M., Shelest, A.Ye., Zubko, A.M. and Gurevich, Ya. B.

TITLE: Investigation of some conditions of hot rolling of titanium in vacuum and in air

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1961, No.6, pp.106-110

TEXT: The authors investigated the force, velocity and deformation conditions during the process of rolling of titanium in vacuum and compared the results with similar results obtained for rolling in air. This was done to elucidate the influence of the scale on the friction coefficient, specific pressure and other parameters of the rolling of commercially pure titanium. From a pre-forged blank, specimens 15 x 20 mm, 200 mm long were cut. Those specimens which were to be rolled in vacuum (3 x 10^{-5} mm Hg) were heated in a small-chamber electric furnace with molybdenum heater filaments; those to be rolled in air were heated in an electric furnace with nichrome heater filaments. The specimens were rolled in the temperature range 800-1200°C on a two-high mill

Card 1/6

with rolls of 85 mm diameter. The average reduction was 20%, the speed of rolling was 6.5 m/min. The rolls had a ground surface with a hardness of 55 RC. The rolling parameters, i.e. the total pressure, the torque, the speed of the rolled strip and the circumferential speed of the rolls were recorded by means of an 8-loop oscillograph. Fig.3 shows the dependence of the friction coefficient f''' and of the specific friction force τ_s, kg/mm^2 on the rolling temperature, °C. Fig.4 shows the dependence of the friction coefficient f' and of the forward slip S_h on the rolling temperature, °C. Fig.5 shows the dependence of the specific pressure, kg/mm^2, on the rolling temperature, °C. Fig.6 gives the dependence of the specific pressure, kg/mm^2, and the friction coefficient f' on the reduction, %. In all these graphs the continuous line curves apply to rolling in air and the dashed line curves to rolling in vacuum. In the paper the authors apply three differing friction coefficients, one f''' determined according to the formula of S. I. Gubkin (Ref.12: Theory of shaping metals by pressure, Metallurgizdat, 1947), another f' determined on the basis of the theoretical formula for the torque, proposed by

Investigation of some conditions ... S/148/61/000/006/006/013
E073/E535

V. Bayukov and the third, f', determined from the value of the forward slip. The following conclusions are arrived at:
1. In all cases of rolling in air the curve expressing the dependence of the friction coefficient on the temperature has a convex-shaped section with a maximum in the temperature range 1050-1150°C. If titanium is rolled in air at 800-1100°C, a dense layer of titanium dioxide scale forms which leads to an increase in sliding friction coefficient and spreading. At rolling temperatures above 1100°C, a dense layer of scale of a fine grain structure forms which peels off easily from the base metal and leads to a reduction of the friction coefficient; the friction coefficients f' and f'' are similar and their values are very near to each other. When rolling was performed in vacuum, the friction coefficient was considerably lower and showed a tendency to increase with increasing rolling temperature. This is attributed to a drop in the specific pressure with a minimum effect of other factors.
2. Changes in the specific pressure p and the specific friction force τ_s were similar during rolling in vacuum and in air. The

Investigation of some conditions ... S/148/61/000/006/006/013
E073/E535

values p and τ_s, and consequently also the torque, are affected by the sudden α to β transformations and this explains the sharp drop in the friction coefficient, forward slip and the slight increase in spreading in the temperature range 850-950°C.
3. With increasing reduction an increase is observed in the specific pressure and a decrease in the friction coefficient.
4. The experiments revealed considerable qualitative and quantitative differences in the force, velocity and geometrical factors pertaining to rolling titanium in vacuum and in air.
Experiments carried out earlier by some of the authors (Ref.14: Stal', 1959, No.10, 929-931) yielded differing results, namely, the coefficient of friction and the geometrical and force conditions depending on it were considerably higher in vacuum than in air in the case of rolling pure iron with a carbon content of 0.01%. This clearly indicates that the investigated quantities depend on the chemical composition of the rolled metal. There are 6 figures and 14 references: 13 Soviet and 1 non-Soviet.

ASSOCIATION: Institut metallurgii imeni A.A. Baykova (Institute of Metallurgy imeni A. A. Baykov)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

S/137/62/000/003/018/191
A006/A101

AUTHORS: Yemyashev, A. V., Zubko, A. M., Neymark, V. Ye.

TITLE: On the problem of the effect of vacuum melting and teeming upon the metal properties and the ingot quality

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 41, abstract 3V258 ("Sb. tr. In-t metalloved. i fiz. metallov Tsentr. n.-i. in-ta chernoy metallurgii", 1959, v. 6, 169-186)

TEXT: At a TsNIICherMET pilot plant magnetically soft Fe-Co alloy (50)2 (K50F2) was melted in a high-frequency vacuum furnace; the alloy contains in %: $\geq$ 0.05 C; $\geq$ 0.2 Si; $\geq$ 0.2 Mn, 49 - 51 Co; 1.5 - 2 V; $\geq$ 0.5 Ni, $\geq$ 0.025 S and P, the rest Fe. In the furnace space in cold state a vacuum was produced of the order of $1 \cdot 10^{-3}$ mm Hg. The heats were produced in ZrO_2 crucibles which were manufactured directly on the furnace. One crucible withstands $\geq$ 40 heats. The melted ingots weigh 30 - 45 kg. In the vacuum-melted metal, the content of gas, non-metallic impurities and magnetic properties were determined. It was established that the melting of K50F2 alloy in a vacuum of 500 - 50 mm Hg was not accompanied by changes in the chemical composition of the alloy, except Si, whose

Card 1/2

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

S/137/62/000/003/018/191
A006/A101

amount decreased by 50%. The content of gases in the metal varies from 10 to 20 ml/100 g, instead of 60 ml/100 g contained in metal that was melted by conventional technology. The amount of non-metallic impurities in the alloy decreased substantially, and its magnetic properties are improved. Studies of the effect of vacuum melting and teeming of low-carbon nickel steel, containing 0.1 - 0.15% C and 2 - 3% Ni, on the formation of bubbles in the ingot, have shown that gas bubbles are formed during the teeming into vacuum molds of steel that had been subjected to short-time vacuum treatment in the ladle at 30 - 40 mm Hg pressure. Therefore teeming of metal that had been vacuum-treated in the ladle should be carried out in inert atmosphere.

G. Lyubimova

[Abstracter's note: Complete translation]

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

S/509/62/000/009/006/014
D207/D308

AUTHORS: Pavlov, I. M., Sigalov, Yu. M., Gurevich, Ya. B. and Zubko, A. M.

TITLE: Conditions during hot rolling in vacuum of various pressures, in argon and in air

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Trudy, no. 9, Moscow, 1962. Voprosy plasticheskoy deformatsii metalla, 105-108

TEXT: The present work is a continuation of an earlier investigation by Ya. B. Gurevich and A. M. Zubko. The present authors studied the effect of vacuum (10^{-1} - 10^{-5} mm Hg), of pure argon and of air on the coefficient of friction, and on geometrical and force parameters of rolling. The materials subjected to rolling were pure iron and nickel. The rolling tests were carried out at 1100°C at the rate of 6.5 m/min which produced 30% deformation. The rolling mill was of the construction developed at the KhFTI AN USSR (Khar'kov Physico-Technical Institute, AS UkrSSR) which had 85 mm dia-

Card 1/2

meter rolls made of ШХ15 (ShKh15) steel. Vacuum was measured with a ВИТ-1 (VIT-1) gauge. Samples were 150 mm long and 10 x 12 mm in cross-section. The coefficient of friction and the resistance to deformation rose in vacuum on decrease of pressure; in argon the coefficient of friction was the same as an 10^{-1} - 10^{-3} mm Hg vacuum. In air the coefficient of friction was the lowest. There are 2 figures.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

S/509/62/000/009/007/014
D207/D308

AUTHORS: Pavlov, I. M., Sigalov, Yu. M., Gurevich, Ya. B. and Zubko, A. M.

TITLE: On the temperature dependence of some hot-rolling parameters in vacuum and in air

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Trudy, no. 9, Moscow, 1962. Voprosy plasticheskoy deformatsii metalla, 109-114

TEXT: The present work is a continuation of an investigation by the authors reported in the preceding paper (pp. 105 - 108 in the present issue). Rolling tests were carried out on pure iron (0.01% C) and nickel at temperatures of 800 - 1200°C using a ЦНИИЧМ (TsNIIChM) rolling mill under the conditions described in the preceding paper. Temperature was measured with a thermocouple and an СПР (SPR) potentiometer. The coefficient of friction of both iron and nickel was lower in air than in 10^{-5} mm Hg vacuum. In air and in vacuum the temperature dependence of the coefficient of friction

Card 1/2

On the temperature ...

S/509/62/000/009/007/014
D207/D308

of iron had a maximum at 900°C, but in vacuum the friction passed also through a minimum at 1000°C and then rose with temperature. In the case of nickel the coefficient of friction fell with increase of temperature in vacuum, but in air there was a maximum at 900°C. The resistance of deformation and other rolling parameters varied with the atmosphere and temperature roughly in the same way as did the coefficient of friction. There are 6 figures.

Card 2/2

YEMYASHEV, A.V., kand.tekhn.nauk; ZUBKO, A.M., kand.fiziko-matematicheskikh nauk

Effect of vacuum smelting on the composition and properties of metals and alloys. Probl.metalloved.i fiz.met. no.7:450-471 '62. (MIRA 15:5)

(Vacuum metallurgy)

PAVLOV, I.M.; SIGALOV, Yu.M.; GUREVICH, Ya.B.; ZUBKO, A.M.

Hot rolling conditions in vacuum of varying degrees in argon and in air. Trudy Inst.met. no.9:105-108 '62. (MIRA 16:5)
(Rolling (Metalwork))

PAVLOV, I.M.; SIGALOV, Yu.M.; GUREVICH, Ya.B.; ZUBKO, A.M.

Temperature relationship between certain parameters of hot rolling in a vacuum and in air. Trudy Inst.met. no.9:109-114 '62.
(MIRA 16:5)

(Rolling (Metalwork))

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520015-5"